

Amendments to the Claims

1. (Previously presented) A turbine engine nozzle subassembly comprising:
an upstream flap;
a downstream flap pivotally coupled to the upstream flap for relative rotation about a hinge axis; and
an actuator linkage coupled to the downstream flap along a forward half thereof for actuating the upstream and downstream flaps between a plurality of throat area conditions while permitting aerodynamically-induced orientation changes of the downstream flap.
2. (Original) The subassembly of claim 1 further comprising:
an external flap pivotally coupled to the downstream flap and to an environmental structure so that a span between respective coupling locations with said downstream flap and environmental structure is extensible and contractable responsive to aerodynamic forces; and
means for restricting an extensibility range of said external flap.
3. (Previously presented) The subassembly of claim 2 wherein:
said means for restricting comprises a secondary link having a first pivotal coupling location to the environmental structure and a second pivotal coupling location to the downstream flap, the second pivotal coupling location being intermediate the coupling location of the downstream flap to the external flap and a coupling location of the actuator linkage to the downstream flap; and
the secondary link has a restricted free float range relative to the downstream flap.
4. (Previously presented) A turbine engine nozzle comprising:
a static structure;
a plurality of flap subassemblies comprising:
an upstream flap pivotally coupled to the static structure for relative rotation about an axis essentially fixed relative to the static structure; and
a downstream flap pivotally coupled to the upstream flap for relative rotation

about a hinge axis permitting aerodynamically-induced mode changes of the downstream flap; and

means for actuating articulation of the upstream and downstream flaps of the plurality of flap subassemblies within a range of areas of a throat along the downstream flap while minimizing changes in throat area at a given design point induced by said mode changes.

5. (Original) The nozzle of claim 4 wherein:

the plurality of flap subassemblies are axisymmetrically arranged about an engine centerline;

said articulation is simultaneous for each of the flap subassemblies; and

each of the plurality of flap subassemblies further comprises an external flap pivotally coupled to the downstream flap.

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Previously presented) The subassembly of claim 1 wherein:

said throat is formed along a longitudinally convex surface portion of the downstream flap.

10. (Previously presented) The subassembly of claim 1 wherein:

said throat is formed downstream of a hinge axis coupling the upstream flap to the downstream flap.

11. (Previously presented) A nozzle comprising:

a circumferential array of subassemblies of claim 1; and

a synchronization ring mounted for longitudinal translation between first and second

positions and coupled to said linkage of each of the subassemblies so that said translation causes said actuating.

12. (Previously presented) The nozzle of claim 11 wherein:
the linkage of each of the subassemblies comprises a bell crank and a transfer link coupling the bell crank to the downstream flap.
13. (Previously presented) The nozzle of claim 4 wherein:
said throat is formed along a longitudinally convex surface portion of the downstream flap.
14. (Currently amended) A turbine engine nozzle subassembly comprising:
an upstream flap;
a downstream flap pivotally coupled to the upstream flap for relative rotation about a hinge axis; and
an actuator linkage coupled to the downstream flap along a forward half thereof for actuating the upstream and downstream flaps between a plurality of throat area conditions, said throat being formed along a longitudinally convex surface portion of the downstream flap, the actuator linkage coupled to the upstream flap only via the downstream flap.
15. (Canceled)
16. (Previously presented) A turbine engine nozzle subassembly comprising:
an upstream flap;
a downstream flap pivotally coupled to the upstream flap for relative rotation about a hinge axis; and
an actuator linkage coupled to the downstream flap along a forward half thereof for actuating the upstream and downstream flaps between a plurality of throat area conditions and comprising a bell crank and a transfer link coupling the bell crank to the downstream flap.

17. (Previously presented) The subassembly of claim 16 wherein:
said throat is formed downstream of a hinge axis coupling the upstream flap to the downstream flap.
18. (Previously presented) The subassembly of claim 16 wherein:
the linkage permits aerodynamically-induced orientation changes of the downstream flap.
19. (Currently amended) A turbine engine nozzle subassembly comprising:
a convergent flap;
a divergent flap; and
an actuation linkage, coupled to the divergent flap so as to permit an aerodynamically-induced mode change articulation of the divergent flap to rotate the ~~second~~ divergent flap about a non-fixed instantaneous center of rotation while simultaneously rotating the divergent flap relative to the convergent flap about a non-fixed hinge axis.
20. (Previously presented) The subassembly of claim 19 wherein:
a nozzle throat is formed downstream of a hinge axis coupling the convergent flap to the divergent flap.
21. (New) A turbine engine nozzle subassembly comprising:
an upstream flap;
a downstream flap pivotally coupled to the upstream flap for relative rotation about a hinge axis; and
an actuator linkage coupled to the downstream flap along a forward half thereof for actuating the upstream and downstream flaps between a plurality of throat area conditions, said throat being formed along a longitudinally convex surface portion of the downstream flap downstream of a hinge axis coupling the upstream flap to the downstream flap.